I claim:

1. A blood clot filter having a central filter longitudinal axis and which is collapsible into a collapsed configuration toward said filter longitudinal axis for insertion into a blood vessel and which is radially expandable outwardly from said filter longitudinal axis to an expanded configuration for contact with an inner wall of said blood vessel, said blood clot filter having leading and trailing ends and comprising:

a plurality of elongate, spaced appendages having first and second ends, the first ends of said appendages being mounted adjacent to said filter longitudinal axis and said plurality of elongate spaced appendages being formed to extend outwardly away from said filter longitudinal axis to the second ends thereof which are spaced outwardly from said filter longitudinal axis in the expanded configuration of said filter, each of a plurality of said elongate spaced appendages having an appendage longitudinal axis outwardly curved hook terminating in a point at the second end thereof to engage and penetrate the vessel inner wall in the expanded configuration of said filter, at least a portion of said hook being formed with a cross sectional area of reduced size relative to the cross sectional area of said appendage to permit said hook to bend toward a straightened configuration to remove said hook from the vessel wall, each said hook having a maximum migration force such that a force above said maximum migration force applied to said hook will cause said hook to straighten.

2. The blood clot filter of claim 1 wherein the entire cross sectional area along the length of each said hook is of reduced size relative to the cross sectional area of the appendage bearing said hook.

3. The blood clot filter of claim 1 wherein said elongate appendages and hooks are formed of thermal shape memory material having a temperature transformation level below which said material is relatively pliable and compressible and above which said material is self-expandable to a substantially rigid, predetermined configuration.

4. The blood clot filter of claim 2 wherein said elongate appendages are formed of thermal shape memory material having a temperature transformation level below which said material is relatively pliable and compressible and above which said material is self-expandable to a substantially rigid, predetermined configuration.

5. The blood clot filter of Claim 1 wherein the sum of the maximum migration forces for the hooks on said elongate appendages is equal to a desired filter migration resistance force for said filter wherein said filter will remain anchored against migration within said vessel when subjected to forces below said filter migration resistance force.

6. The blood clot filter of claim 5 wherein said hooks are formed to impart a filter migration resistance force to said filter within a range of from 10 mmHg to 120 mmHg.

7. The blood clot filter of claim 6 wherein said elongate appendages and hooks are formed of thermal shape memory material having a temperature transformation level below which said material is relatively pliable and compressible and above which said material is self-expandable to a substantially rigid, predetermined configuration.

8. The blood clot filter of claim 1 wherein said plurality of elongate, spaced appendages include a plurality of spaced elongate legs and a plurality of spaced, elongate arms, both said elongate legs and arms having first ends mounted adjacent to said longitudinal axis, said arms in the expanded configuration of said filter each extending angularly outward away from the longitudinal axis to an elbow spaced between said first and second ends of said arm and then angularly away from said elbow to the second end of said arm.

9. The blood clot filter of claim 8 wherein said elongate legs extend toward the leading end of said filter to form a first filter basket and each said elongate arm angles outwardly from the longitudinal axis of said filter toward the leading end of said filter and then angles away from said elbow toward the leading end of said filter to form a second filter basket.

10. The blood clot filter of claim 9 wherein the entire cross sectional area along the length of said hook is of reduced size relative to the cross sectional area of the appendage bearing the hook.

11. The blood clot filter of claim 9 wherein each said hook is formed integrally with the second end of an elongate leg, said hook being formed with a joinder section adjacent to said elongate leg, said joinder section having a cross sectional area which is reduced in size relative to the cross sectional area of said elongate leg.

12. The blood clot filter of claim 11 wherein said elongate arms and legs are formed of thermal shape memory material having a temperature transformation level below which said material is relatively pliable and compressible and above which said material is self-expandable to a substantially rigid, predetermined configuration.

13. A filter delivery unit for a vascular filter having a plurality of elongate appendages for engaging a vessel wall comprising:

an elongate pusher wire having a free end, and

a flexible hinge formed in said pusher wire spaced from said free end, said pusher wire having an end section extending between said flexible hinge and said

free end, said flexible hinge being formed to permit said pusher wire end section to pivot about said flexible hinge to move said free end radially in all directions.

14. The filter delivery unit of claim 13 wherein said pusher wire is formed with a cross sectional area of reduced size to provide said hinge.

15. The filter delivery unit of claim 14 wherein said pusher wire is formed of thermal shape memory material having a temperature transformation level below which the material is in a martensitic state and relatively pliable and above which the material is normally in an austenitic state and is substantiality rigid, said material exhibiting stress sensitivity which can cause the material to transform to the martensitic state in response to stress while the temperature of the material remains above the temperature transformation level, said cross sectional area of reduced size forming said hinge being formed to receive a concentration of stress applied to said pusher wire end section.

16. The filter delivery unit of claim 13 wherein an enlarged spline spaced from the free end of said pusher wire is secured to said pusher wire adjacent to said hinge, said hinge being positioned between said spline and the free end of said pusher wire, said spline having an outer surface provided with a plurality of spaced grooves extending substantially parallel to the longitudinal axis of said spline to receive the elongate appendages of said filter.

17. The filter delivery unit of claim 16 which includes a filter engaging pusher pad formed on the free end of said pusher wire.

18. The filter delivery unit of claim 17 wherein said pusher wire is formed with a cross sectional area of reduced size to provide said hinge.

19. The filter delivery unit of claim 18 wherein said pusher wire is formed of thermal shape memory material having a temperature transformation level below which the material is in a martensitic state and relatively pliable and above which the material is normally in an austenitic state and is substantiality rigid, said material exhibiting stress sensitivity which can cause the material to transform to the martensitic state in response to stress while the temperature of the material remains above the temperature transformation level, said cross sectional area of reduced size forming said hinge being formed to receive a concentration of stress applied to said pusher wire end section.